CONTENTS

January											Page
Scots Wha Hae (Comments	arv)										1
Photographic Production of	of Grating	s for M	leasure	ment.	J. M. Bu	IRCH					2
An Atomic Standard of La	ength. B.	S. THO	RNTON								8
Chemistry and Clothing.	H. A. TH	OMAS									12
Brittle Lacquers. J. R. Ln	NGE										18
Rocket Propellents. Part	I_I javid	Propelle		GI	DADKED						26
Science in Parliament	Liquid	-						•		•	32
Survey	•	•	•	•	•	•	•		•		33
Book Reviews .		•	•	•	•	•	•	٠	•	•	37
BOOK Reviews .		•		•	•		•		٠		31
February											
The Minute (Commentary)								•			41
Miniature Gyroscopes for	Aircraft a	nd Guid	led Mis	siles (Microinst	ruments !	Series).	W. SIMO	NS		42
Cryotrons and Other Supe	rconducti	ng Com	puter I	Device	s. J. M.	Lock					49
Virus Research with Specia											55
Rocket Propellents. Part											60
Waverley Gold Medal Ess											66
Research in London's Tec	hnical Co	lleges.	S. Cou	SINS							67
Studies of Fires in Buildi	ngs Using	Mode	ls. Par	rt I—		ets in Io	nition an	d Fires	in	Rooms.	
											69
Survey											78
Book Reviews .	•	•	•	•	•	•	•	•	٠	•	79
BOOK REVIEWS .		•	•	•	•	•				٠	1,7
March											
A Staff College for Techno The Arithmetic of Sailing.	ologists (C	Commen	tary). S	. Cou	SINS		1 .				81
The Arithmetic of Sailing.	H. M. E	BARKLA									82
Studies of Fires in Buildin	gs Using	Models	. Part	II-S	ome Theor	retical ar	d Practi	cal Con	side	rations.	
P. H. THOMAS .											87
The Phosphonitrilic Deriva											94
Reaction Zone Length and											101
Miniature Relays for Use i								E. Hyp	E.		105
_		_		-							115
Book Reviews .											118
April											
Research in Schools (Com	mentarv).	Sir Ep	WARD S	SALISBI	URY.						121
Modern Dyes. C. PAINE				,							
Electronic Measurement o	f Particle	Size. F	LE. K	UBITSO	CHEK						128
New Ways with Inorganic	Polymers	. J. H	S. GRE	EN							136
New Ways with Inorganic Miniature a.c. Servomotor	s and Sv	chros (Microir	astrum	ents Serie	s) C R	OBSON				141
A Russian Machine Trans											148
Processing by Irradiation										DB	. 10
POWELL and B. BRIDG			zanon	0) 141	uncur unc	· I marmi	accuire at	1 TOWN		D. D.	151
Survey				٠	•		•	•			157
Book Reviews .		*	•								159
X-Ray Scattering of Car	bon Blac	K. (Lett	er to th	ie Edit	or). E. G	. STEWA	RD and	5. P. Co	K.	*	163

CONTENTS

Ph Te Bu M M Ele So

Fo

Ra Pro Vir Ma Mo Lt

No

The The Ma Pro The Shi Shi E

De Inte Ma

The

Mo Nev Pro Rad Si B

Sub

May						i	Page
Research in Technical Colleges in the Provinces (C	Commentary).	S. Cousin	IS .				165
Brewing (Biochemical Engineering Series). W. P.							167
Vertical Take-Off—a Survey. D. Keith-Lucas							172
The Electron Theory of Metals. B. L. MORDIKE							179
Microminiaturization of Electronic Equipment (M	icroinstrumen	te Series)	GW	A DUA	OMER		187
Processing by Irradiation. Part II—Application to						N	193
Polytechnical Education in the U.S.S.R. T. Nola		mon. 1. J.	LET a	IU J. IV.	THEKMA		198
	Ν .		•		•		201
Survey			•	•		•	202
Book Reviews		•	•			٠	202
June							
							205
Biochemical Engineering (Commentary). F. C. Wi		or (Dinal		Funinas	ina Can	inal	203
Freezing, Freeze-Drying and Freeze-Concentration	n of roodsti	IIIS (Biochi	emicai	Engineer	ing Ser	les).	207
R. GANE			•	•	•		
The Rheology of Letterpress and Offset Inks. E.						•	212
Multiple Airborne Instrument Display. (Microins		es). S. A.	TIBBS			*	218
Communication in a Honeybee Colony. C. BUTLE							223
Removal of Radioactive Particulates from Air. P.	A. F. WHITI	and S. E.	SMITH				228
Polymer Viscoelasticity and Liquid Structure. P.	MASON .						234
Survey							240
Book Reviews							242
DOOR REVIEWS							
July					,		
The Importance of Safety in the Design of Road	Johiolos (Com		W G	C 4 3 2 F			245
		imeniary)	W. O13	SANE	•		248
Tercentenary of the Royal Society. Sir EDWARD S	ALISBURY	W II D			Henren	and.	240
Precision Temperature Measurement Outside the	Laboratory.	W. H. P	. LESLI	E, J. J.	HUNTER	and	250
D. Rовв					(D) 1		250
Continuous Culture Process-Application to the		al Fermen	itation	Industry	(Bioch	emi-	
cal Engineering Series). M. LUMB and G. D.							257
Silicon Nitride—A New Ceramic for High Tempe	rature Engine	eering and	Other	Applica	tions.	V. L.	
PARR		•					261
Protein Resources. A. E. BENDER							270
Miniature Electronic Instruments for Medical Re	search. (Mic	roinstrume	nts Ser	ies). D.	W. BA	KER,	
D. L. Franklin and R. M. Ellis .							275
Survey							281
Provincial Technical Colleges (Letters to the Ed.	itar)						284
Book Reviews							285
August							
Urban Organization (Commentary) .							289
Instruments for Space Research (Microinstruments	Carias) D	I F Roy		•			290
				Verez			295
Isolation and Identification of Volatile Fruit Flav	ours. D. S. I	DIDMEAD at	IU D. V	VELII			300
Acoustic Pump. T. M. DAUPHINEE		٠		•	•	۰	
Production of Vaccines (Biochemical Engineering		NGAR					304
The Physical Constants of Sea Ice. D. L. ANDERS		•	•				310
Acoustics and the New Architecture. E. G. RICH					0		319
Determination of Hydrogen in Metals: A Carrier	Gas Method	I. F. R. C	OE				323
Survey							327
•						-	
Book Reviews							330

V

CONTENTS

Physics Education									
	(Commentary)								
Physics Education Tercentenary of the Builders and Fille	he Royal Societ	y. Sir CHAI	RLES DARW	IN .					
Builders and Fille	rs in Household	Detergent	s. N. PILP	EL .					
Builders and Fille Modern Ideas on Modern Trends in	the Mechanical	Polishing of	of Metals	L F SAI	MILLER				
Modern Trends in	Processing Car	nned Vegets	bles (Ricci	amical F	nginaari	na Carias)	D II	THORRE	*
							к. п.	I HORPE	
Some Techniques Survey .	for the Evernin	ntion of Co	TEK .	oten T 1					
Some rechniques	for the Examin	ation of Co	implex Spec	ctra. L.	BOVEY				
Survey .			•			•			*
Book Reviews					•	•		٠	٠
October									
Food for the Futu	ire (Commentar	v)							
Methods of Prese			menting F	reezing o	r Cann	ing (Rioch	emical	Fngineeri	ina
Series) F. C.	. WEBB .	or thunk I or	·	i cozing c	Cuini	ing (Dioth	cmicui	Lingineeri	nig.
Radiological Deco				cal Acna	ete D	G STEVE	IFON	•	•
Properties of Grap	shite: Part I	Pranaration	Ctrusting	nd Mask	miscl D	O. SIEVE	CE	Dragers	
							. C. F.	BLACKM	AN
Virus Interference Magnetic Properti	and interieron	. D. C. BU	RKE .			•			
Magnetic Properti	ies of Epitaxiall	y Grown F	ilms. O. S.	HEAVEN	s .				
Modern Techniqu			. IRVING				•	•	
Lt Gen. The Lord	Weeks (Obitua	ry) .					0		
Survey .									
Book Reviews									
The Education of The Solid Image N	Company (1-4	D 11/-	werley Gold	I Medal E	Essay Co	mpetition).	R. L.	Gregory	
	· · · C · · · · · · · · · · · · · · · ·	pectra. L. l	BOVEY .						
The Interpretation	of Complex S								
The Interpretation Man Powered Flig	ETITE I TAOIAME	ILER :	0						
The Interpretation Man Powered Flig Properties of Gran	hite Part II	Thermal and	d Flectronic	Properti	e I C	. F. BLACE	CMAN		
The Interpretation Man Powered Flig Properties of Gran	hite Part II	Thermal and	d Flectronic	Properti	e I C	F. BLACE	KMAN		
The Interpretation Man Powered Flig Properties of Grap The Scope of Org	phite: Part II— anotin Compou	Thermal and	d Electronic istry. E. S	Properti	e I C	. F. BLACE	KMAN	:	
The Interpretation Man Powered Flig Properties of Grap The Scope of Org Shipborne Inertial	phite: Part II— anotin Compou	Thermal and	d Electronic istry. E. S	Properti	e I C	. F. BLACE	CMAN	:	
The Interpretation Man Powered Flip Properties of Grap The Scope of Org Shipborne Inertial Survey .	phite: Part II— anotin Compou I Navigation Sy	Thermal and	d Electronic istry. E. S	Properti	e I C	F. BLACE	KMAN		
The Interpretation Man Powered Flig Properties of Grap The Scope of Org Shipborne Inertial	phite: Part II— anotin Compou I Navigation Sy	Thermal and	d Electronic istry. E. S	Properti	e I C	F. BLACE	KMAN		
The Interpretation Man Powered Flip Properties of Grap The Scope of Org Shipborne Inertial Survey .	phite: Part II— anotin Compou I Navigation Sy	Thermal and	d Electronic istry. E. S	Properti	e I C	F. BLACE	KMAN		
The Interpretation Man Powered Flip Properties of Grap The Scope of Org Shipborne Inertial Survey . Book Reviews December	phite: Part II— anotin Compou I Navigation Sy	Thermal and unds in Industrems. H.	d Electronic istry. E. S T. HEAL	Properti HEDGES	e I C	F. BLACE	KMAN		
The Interpretation Man Powered Flip Properties of Gray The Scope of Org Shipborne Inertial Survey Book Reviews December International Coo Magnetohydrodyn	anotin Compou I Navigation Sy 	Thermal and unds in Industems. H.	d Electronic stry. E. S T. HEAL	Properti Hedges .	es. L. C		•		·
The Interpretation Man Powered Fli Properties of Gray The Scope of Org Shipborne Inertial Survey Book Reviews December International Coo Magnetohydrodyn R. HAWLEY	peration in Atonanic Power Ge	Thermal and indicate in Industrial	d Electronic stry. E. S T. HEAL (Comment	e Properti . Hedges	es. L. C		Essay C	`. `ompetition	
The Interpretation Man Powered Flip Properties of Gray The Scope of Org Shipborne Inertial Survey Book Reviews December International Coo Magnetohydrodyn R. HAWLEY The Polybloc Syst	peration in Atomanic Power Ge	Thermal and indicate in Indica	d Electronic stry. E. S T. HEAL (Comment Special Priz nisotropic	e Properti . Hedges	es. L. C		Essay C	`. `ompetition	
The Interpretation Man Powered Flip Properties of Gray The Scope of Org Shipborne Inertial Survey Book Reviews December International Coo Magnetohydrodyn R. HAWLEY The Polybloc Syst Essay Compe	phite: Part II— anotin Compout I Navigation Sy peration in Ato nanic Power Ge tem of Construct tition). A. HILL	Thermal and indicate in Indica	d Electronic stry. E. S T. HEAL (Comment	e Properti . Hedges	es. L. C		Essay C	`. `ompetition	
The Interpretation Man Powered Flip Properties of Grap The Scope of Org Shipborne Inertial Survey Book Reviews December International Coo Magnetohydrodyn R. HAWLEY The Polybloc Syst Essay Compe Modern Glues. F	phite: Part II— anotin Compout I Navigation Sy peration in Ato nanic Power Ge tem of Construct tition). A. HILL R. F. WEBB	mic Energy emic Energy eneration. (d Electronic stry. E. S T. HEAL (Comment Special Priza	Properti HEDGES ary) te in Wav	es. L. C		Essay C	`. `ompetition	
The Interpretation Man Powered Flip Properties of Grap The Scope of Org Shipborne Inertial Survey Book Reviews December International Coo Magnetohydrodyn R. HAWLEY The Polybloc Syst Essay Compe Modern Glues. R New Varieties of	phite: Part II— anotin Compout I Navigation Sy peration in Atomanic Power Ge tem of Construct tition). A. HILL L. F. WEBB Magnetic Mater	mic Energy eneration for A	d Electronic stry. E. S T. HEAL (Comment Special Priz nisotropic	e Properti HEDGES 	es. L. C	old Medal I Prize in We	Essay Caverley	ompetition Gold Med	dal
The Interpretation Man Powered Flip Properties of Gray The Scope of Org Shipborne Inertial Survey Book Reviews December International Coo Magnetohydrodyn R. HAWLEY The Polybloc Syst Essay Compe Modern Glues. F New Varieties of Properties of Gra	phite: Part II— anotin Compout Navigation Sy peration in Ato manic Power Ge tem of Construct tition). A. HILI R. F. Webb Magnetic Mater phite. Part III-	mic Energy eneration. (A. LIARD	d Electronic stry. E. S T. HEAL (Comment Special Priz nisotropic	e Properti HEDGES 	es. L. C	old Medal I	Essay C	ompetition Gold Med	dal
The Interpretation Man Powered Flip Properties of Gray The Scope of Org Shipborne Inertial Survey Book Reviews December International Coo Magnetohydrodyn R. HAWLEY The Polybloc Syst Essay Compe Modern Glues. R New Varieties of Properties of Gra Radio Wave Prop	phite: Part II— anotin Compout Navigation Sy peration in Ato manic Power Ge tem of Construct tition). A. HILI R. F. Webb Magnetic Mater phite. Part III-	mic Energy eneration. (A. LIARD	d Electronic stry. E. S T. HEAL (Comment Special Priz nisotropic	e Properti HEDGES 	es. L. C	old Medal I	Essay C	ompetition Gold Med	dal
The Interpretation Man Powered Flip Properties of Gray The Scope of Org Shipborne Inertial Survey Book Reviews December International Coo Magnetohydrodyn R. HAWLEY The Polybloc Syst Essay Compe Modern Glues. F New Varieties of Properties of Gray Radio Wave Prop Survey	phite: Part II— anotin Compout Navigation Sy peration in Ato manic Power Ge tem of Construct tition). A. HILI R. F. Webb Magnetic Mater phite. Part III-	mic Energy eneration. (A. LIARD	d Electronic stry. E. S T. HEAL (Comment Special Priz nisotropic	e Properti HEDGES 	es. L. C	old Medal I	Essay C	ompetition Gold Med	dal
The Interpretation Man Powered Flip Properties of Gray The Scope of Org Shipborne Inertial Survey Book Reviews December International Coo Magnetohydrodyn R. HAWLEY The Polybloc Syst Essay Compe Modern Glues. R New Varieties of Properties of Gra Radio Wave Prop	phite: Part II— anotin Compout Navigation Sy peration in Ato manic Power Ge tem of Construct tition). A. HILI R. F. Webb Magnetic Mater phite. Part III-	mic Energy eneration. (A. LIARD	d Electronic stry. E. S T. HEAL (Comment Special Priz nisotropic	e Properti HEDGES 	es. L. C	old Medal I	Essay C	ompetition Gold Med	dal
The Interpretation Man Powered Flip Properties of Graf The Scope of Org Shipborne Inertial Survey . Book Reviews December International Coo Magnetohydrodyn R. HAWLEY The Polybloc Syst Essay Compe Modern Glues. R New Varieties of Properties of Gra Radio Wave Prop Survey Book Reviews	phite: Part II— anotin Compout Navigation Sy peration in Ato manic Power Ge tem of Construct tition). A. HILI R. F. Webb Magnetic Mater phite. Part III-	mic Energy eneration. (A. LIARD	d Electronic stry. E. S T. HEAL (Comment Special Priz nisotropic	e Properti HEDGES 	es. L. C	old Medal I	Essay C	ompetition Gold Med	dal :
The Interpretation Man Powered Flip Properties of Graf The Scope of Org Shipborne Inertial Survey . Book Reviews December International Coo Magnetohydrodyn R. HAWLEY The Polybloc Syst Essay Compe Modern Glues. R New Varieties of Properties of Gra Radio Wave Prop Survey Book Reviews	phite: Part II— anotin Compout Navigation Sy peration in Ato manic Power Ge tem of Construct tition). A. HILI R. F. Webb Magnetic Mater phite. Part III-	mic Energy eneration. (A. LIARD	d Electronic stry. E. S T. HEAL (Comment Special Priz nisotropic	e Properti HEDGES 	es. L. C	old Medal I	Essay C	ompetition Gold Med	dal
The Interpretation Man Powered Flip Properties of Gray The Scope of Org Shipborne Inertial Survey Book Reviews December International Coo Magnetohydrodyn R. HAWLEY The Polybloc Syst Essay Compe Modern Glues. F New Varieties of Properties of Gray Radio Wave Prop Survey	phite: Part II— anotin Compout Navigation Sy peration in Ato manic Power Ge tem of Construct tition). A. HILI R. F. Webb Magnetic Mater phite. Part III-	mic Energy eneration. (A. LIARD	d Electronic stry. E. S T. HEAL (Comment Special Priz nisotropic	e Properti HEDGES 	es. L. C	old Medal I	Essay C	ompetition Gold Med	dal :